

REMARKS

Claims 1-5 stand rejected in this application. Claims 1 and 4 are amended in this submission, Claim 3 is cancelled, and Claims 6-8 are added. For the reasons set forth below, Applicants respectfully submit that all claims are in condition for allowance.

I. OBJECTIONS TO THE DRAWINGS

The Examiner objected to the drawings because in Figs. 1-4, the reference numbers 3 and 4 were underlined, and the lead line from reference numeral 11 indicated the wrong element. The Examiner also objected to Fig. 5 because the word "SEAT" was misspelled. The reference numbers, lead line and spelling have been corrected in the accompanying Request to Amend Drawings.

The Examiner also indicated that the element "dashboard drawer" was not clear from the disclosure. The term "dashboard drawer" has been eliminated from the specification in favor of the term "dashboard", which has its usual meaning as the element in a vehicle which separates the engine room from the vehicle room.

The Examiner also indicated that it was not clear from the disclosure, why the deceleration becomes negative in section b of the curve shown in Fig. 5. The specification has been amended to clarify this feature, by adding the sentences to the paragraph beginning on page 9, line 22: "The oppositely going deceleration (i.e. acceleration) indicated as area b in Fig. 5, results from the motion of the seat beneath the occupant, which accelerates the occupant briefly to reach the same velocity as the seat. The occupant, seat and vehicle room thereby acquire the same speed and decelerate together as a unit until they come to rest, as shown by the broken line in Fig. 5. No new matter has been introduced by this amendment, as the amendment serves to clarify that which was previously implicit in Fig. 5 and the associated description.

In view of these amendments, the Applicants submit that the Examiner's objections to the drawings have been addressed.

II. OBJECTIONS TO THE SPECIFICATION

The Examiner objected to a number of grammatical errors in the specification. The errors have been corrected by this amendment, as indicated in the text of the replacement paragraphs presented above.

The Examiner also objected to the Abstract, as containing legal phraseology and grammatical errors. The Abstract has been amended to remove legal phraseology and to correct minor grammatical errors.

III. REJECTIONS UNDER 35 U.S.C. §112, second paragraph

Claims 1, 2, 4 and 5 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite. Claim 1 has been amended to correct typographical errors, and to provide the correct antecedent basis for "said seat". Applicants respectfully submit that Claim 1, as well as dependent Claims 2, 4 and 5, satisfy the requirements of 35 U.S.C. §112, second paragraph.

IV. REJECTIONS UNDER 35 U.S.C §102(b)

Claims 1 and 2 were rejected under 35 U.S.C §102(b) as being anticipated by Canadian Patent 636,693 by Blake. However, Claim 1, as amended, recites "a power transmission mechanism transmitting the backward movement of said structure to said seat, to thereby move said seat backward, wherein said power transmission mechanism is a cable; and a guide affixed to the vehicle body, around which the cable is drawn, and from which the cable is affixed to said seat" (emphasis added). Support for the amended claim can be found, for example, on page 6, lines 18-22. Blake neither teaches nor suggests such a feature, as Blake does not disclose the use of a cable for transmitting power. Although Vollmer et al., in U.S. Patent No. 4,795,189, does teach the use of a cable for transmitting power as well as a guide for routing the cable, Vollmer et al. does not disclose a guide "from which the cable is affixed to said seat." Therefore, Claim 1 as amended, is patentable over Blake and Vollmer et al. Claims 2, 4 and 5 depend directly on Claim 1, and are patentable at least thereby.

V. REJECTIONS UNDER 35 U.S.C. §103

Claims 4 and 5 were rejected under 35 U.S.C. §103 as being unpatentable over Blake in view of German Published Application 1,680,095. However, German Published Application 1,680,095 does not remedy the defects of Blake with respect to the patentability of Claim 1, as amended. Therefore, Claims 4 and 5 are patentable at least by their dependence on Claim 1.

VI. NEW CLAIMS 6-8

New independent Claim 6 is supported in the specification on, for example, page 6, lines 11-23. Independent Claim 6 is patentable over Vollmer et al. as it recites the element of "a cable...affixed to said seat", which is neither taught nor suggested in Vollmer et al. Dependent Claim 7 is supported in the specification on, for example, page 5, lines 22-25. Dependent Claim 8 is supported in the specification on, for example, page 6, lines 20-22. Dependent Claims 7 and 8 depend directly from Claim 6, and are patentable at least thereby.

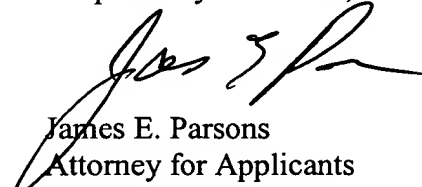
CONCLUSION

For at least the foregoing reasons, Applicants submit that all claims are in condition for allowance, and herewith request reconsideration by the Examiner. Should the Examiner wish to discuss any aspect of this application, the Examiner is invited to telephone the Applicant's attorney at (408) 453-9200.

EXPRESS MAIL LABEL NO:

EV 160 616 225 US

Respectfully submitted,


James E. Parsons
Attorney for Applicants
Reg. No. 34,691

LAW OFFICES OF
SKJERVEN MORRILL LLP

25 METRO DRIVE
SUITE 700
SAN JOSE, CA 95110
(408) 453-9200
FAX (408) 453-7979

APPENDIX A

The following identifies the changes that the present submission makes to the specification.

The paragraph beginning on page 4, line 3 is amended as follows.

Especially, in the case where the present occupant protective apparatus further includes a limit specifying mechanism for specifying the limit of the backward movement of the seats (in the illustrated embodiment, stoppers 16), with a proper time delay after the vehicle collision, there can be generated in the seat a deceleration which goes in the opposite direction to the deceleration caused by the vehicle collision, that is, an acceleration. This acceleration cancels the relative speed between the occupant and the vehicle body to thereby be able to make an inertial force constant instantaneously, so that the deceleration of the vehicle body and the deceleration of the occupant can be made equal to each other in the early stage of the vehicle collision.

The paragraph beginning on page 6, line 11 is amended as follows.

On the front surface of a front dashboard [drawer] 11, which [is used to separate] separates the engine room 4 from the vehicle room 3, there is fixed a cable guide 12 which has an M shape when it is viewed from its upper surface. On and between the highest points of the right and left ridges of the cable guide 12, there is provided a cable 13. The cable 13 is structured in the following manner: [that is,] the two ends of the cable 13 are respectively drawn into the vehicle room 3, are turned back around a guide [sieve] 14 fixed in the rear of the right and left seats 8 and, after [then] that, are connected to their associated cable connecting metal members 15 which are respectively fixed to the lower surfaces of the seats 8.

The paragraph beginning on page 9, line 7 is amended as follows.

In the late stage of the vehicle collision, the backward movement of the seat 8 reaches its limit to thereby stop the backward movement of the engine 6, as soon as the deforming stress of the collision load transmission member 10 is added to the deforming stresses of the

front side frames 5[.]. Then, the deceleration increases again (in Fig. 5, an area shown by c) and, after [then] that, the vehicle room 3 and seats 8 decelerate together as an integral unit (see Fig. 4). [And,] Thereafter, the relative speed between the vehicle room 3[and] , seats 8, and seat belts 9 becomes zero through the above process, and the constraining loads of the seat belts 9 balance well with the deceleration in the late stage of the vehicle collision. Therefore, the occupant is allowed to decelerate together with the vehicle room 3 as an integral unit, [which] and the decelerating state continues until the vehicle body stops perfectly (in Fig. 5, an area shown by d).

The paragraph beginning on page 9, line 22 is amended as follows.

Now, to reduce the impact that the occupant receives in the vehicle collision, firstly, it is important to reduce the deceleration of the occupant as much as possible. In view of this, as described before, in the case of the deceleration waveform (shown by a solid line in Fig. 5) in which, in the early stage of the vehicle collision, there is generated in the seat 8 [the] a higher deceleration than the average vehicle body deceleration for a short period of time[, next]. Next, there is generated in the seat 8 the oppositely going deceleration (that is, an acceleration) for a short period of time and, after [then] that, the seat 8 decelerates with the average vehicle body deceleration, as shown by [a]the broken line in Fig. 5[, the]. The deceleration of the occupant can thereby be controlled down to a low level, when compared with a vehicle which does not incorporate therein an occupant protective apparatus according to the present embodiment.

The paragraph beginning on page 10, line 23 is amended as follows.

While there has been described in connection with the preferred embodiment of the invention, it will be obvious to those skilled in the art that various changes and modifications may be made therein without departing from the invention, and it is aimed, therefore, to cover in the appended claims all such changes and modifications as fall within the true spirit and scope of the invention.

APPENDIX B

The following identifies the changes that the present submission makes to Claims 1 and 4 of U.S. Patent Application 09/733,384 (AB-1085 US).

1. (Amended) An occupant protective apparatus, comprising:
 - a vehicle body including a portion to be deformed on receiving a collision load, said portion being formed at least in front of a vehicle room;
 - a structure made of a rigid body supported on said vehicle body so as to be movable backward relative to said vehicle body on receiving said collision load;
 - a seat supported on said vehicle body so as to be movable in the back-and-forth direction of said vehicle body, said seat including a seat belt for constraining an occupant seated on said seat; [and ,]
 - a power transmission mechanism transmitting the backward movement of said structure to said seat[s], to thereby move said seat backward, wherein the power transmission mechanism is a cable; and
 - a guide affixed to the vehicle body, around which the cable is drawn, and from which the cable is affixed to said seat.
4. (Amended) The occupant protective apparatus as set forth in Claim 1, further comprising a limit specifying mechanism for specifying the limit of said backward movement[s] of said seat.

LAW OFFICES OF
SKJERVEN MORRILL LLP

25 METRO DRIVE
SUITE 700
SAN JOSE, CA 95110
(408) 453-9200
FAX (408) 453-7979

APPENDIX C

The following identifies the changes that the present submission makes to the abstract of U.S. Patent Application 09/733,384 (AB-1085 US).

The present occupant protective apparatus [comprises] includes a vehicle body in which a portion to be deformed on receiving a collision load (in the illustrated embodiment, the front side frames) is formed at least in front of a vehicle room (3), a structure made of a rigid body supported on the vehicle body in such a manner that it is movable backward on receiving the collision load (in the illustrated embodiment, the engine 6), seats (8) each including a seat belt (9) for constraining an occupant seated on the seat (8) and supported on the vehicle body so as to be movable in the back-and-forth direction of the vehicle body, and a power transmission mechanism for transmitting the backward movement of the structure to thereby move the seats (8) backward (in the illustrated embodiment, the cable 13). With use of the present occupant protective apparatus, the structure such as the engine is allowed to move backward as soon as a vehicle collision occurs and, with the backward movement of the structure, the seats can be moved backward. Due to this, in the early stage of the vehicle collision, in the seats and seat belts, there is generated deceleration which is higher than the deceleration of the passenger room of the vehicle body, thereby being able to enhance the occupant constraining forces that are given by the seat belts.

LAW OFFICES OF
SKJERVEN MORRILL LLP

25 METRO DRIVE
SUITE 700
SAN JOSE, CA 95110
(408) 453-9200
FAX (408) 453-7979